PATENT COOPERATION TREATY

TRANSLATION

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

	Date of mailing *(day/month/year)*
Applicant's or agent's file reference W1960-000000	FOR FURTHER ACTION See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/JP2004/017375	24.11.2004	28.11.2003

International Patent Classification (IPC) or both national classification and IPC

Applicant
Aristo K.K.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I — Basis of the opinion
- ☐ Box No. II — Priority
- ☒ Box No. III — Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV — Lack of unity of invention
- ☒ Box No. V — Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI — Certain documents cited
- ☐ Box No. VII — Certain defects in the international application
- ☐ Box No. VIII — Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP	Authorized officer
Facsimile No.	Telephone No.

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/JP2004/017375

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

   ☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

   a. type of material

      ☒ a sequence listing

      ☐ table(s) related to the sequence listing

   b. format of material

      ☐ in written format

      ☒ in computer readable form

   c. time of filing/furnishing

      ☐ contained in the international application as filed.

      ☒ filed together with the international application in computer readable form.

      ☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/JP2004/017375

Box No. III **Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application

☒ claims Nos. 12, 13

because:

☒ the said international application, or the said claims Nos. 12, 13
relate to the following subject matter which does not require an international preliminary examination (*specify*):

The subject matters of claims 12, 13 relate to a method of treatment of the human by therapy in accordance with PCT Rule 67.1(iv).

☐ the description, claims or drawings *(indicate particular elements below)* or said claims Nos. _____
are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. _____ are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for said claims Nos. 12, 13

☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form
- ☐ has not been furnished
- ☐ does not comply with the standard

the computer readable form
- ☐ has not been furnished
- ☐ does not comply with the standard

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.

☐ See Supplemental Box for further details.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/JP2004/017375

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	6-11	YES
	Claims	1-5	NO
Inventive step (IS)	Claims		YES
	Claims	1-11	NO
Industrial applicability (IA)	Claims	1-11	YES
	Claims		NO

2. Citations and explanations:

Document 1: Rea D. et al., Highly efficient transduction of human monocyte-derived dendritic cells with subgroup B fiber-modified adenovirus vectors enhances transgene-encoded antigen presentation to cytotoxic T cells, J. Immunol., 2001, Vol.166, pages 5236 to 5244

Document 2: Shayakhmetov D. M. et al., Efficient gene transfer into human CD34(+) cells by a retargeted adenovirus vector, J. Virol., 2000, Vol.74, pages 2567 to 2583

Document 3: Mizuguchi H. et al., Adenovirus vectors containing chimeric type 5 and type 35 fiber proteins exhibit altered and expanded tropism and increase the size limit of foreign genes, Gene, 2002, Vol.285, pages 69 to 77

Document 4: JP, 2003-501041, A (UNIVERSITY OF WASHINGTON), 14 January, 2003 (14.01.03), full text & WO, 2000-073478, A2 & EP, 1181382, A2 & AU, 200054640, A

Document 5: Yoshida T. et al., Activation of HIV-1-specific immune responses to an HIV-1 vaccine constructed from a replication-defective adenovirus vector using various combinations of immunization protocols, Clin. Exp. Immunol., 2001, Vol.124, pages 445 to 452

Document 6: Casimiro D. R. et al., Vaccine-induced immunity in baboons by using DNA and replication-incompetent adenovirus type 5 vectors expressing a human immunodeficiency virus type 1 gag gene, J. Virol., 2003 July, Vol.77, pages 7663 to 7668

Document 7: Luo L. et al., Budding and secretion of HIV Gag-Env virus-like particles from recombinant human adenovirus infected cells, Virus Res., 2003 Mar., Vol.92, pages 75 to 82

Document 8: Shiver J. W. et al., Replication-incompetent adenoviral vaccine vector elicits effective anti-immunodeficiency-virus immunity, Nature, 2002, Vol.415, pages 331 to 335

• The subject matters of claims 1-5 do not appear to be novel, to involve an inventive step in view of documents 1-4 cited in the ISR.

The documents 1-4 are recognized to describe a chimeric type 5/type 11 or type 35 adenovirus vector, wherein a gene encoding the envelope protein is integrated into a nonproliferation type 5 adenovirus in such a manner as allowing the expression and a gene encoding the fiber protein of the type 5 adenovirus is substituted by a gene encoding the fiber protein of a type 11 or type 35 adenovirus in such a manner as allowing the expression.

Since it is not clear that "a mutant having an equivalent function" as described in the claims 1-4 indicates concretely what kind of protein, the subject matters of claims 1-5 cannot be distinguished

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

definitely from the subject matters of claims 1-4.

• The subject matters of claims 6-11 do not appear to involve an inventive step in view of documents 1-4 cited in the ISR.

As mentioned above, it is recognized that the documents 1-4 describe the subject matters of claims 1-5.

A person skilled in the art could have appropriately conceived the idea of manufacturing pharmaceutical composition containing adenovirus vector as described in the documents 1-4.

• The subject matters of claims 1-11 do not appear to involve an inventive step in view of documents 1-8 cited in the ISR.

The documents 5-8 are recognized to describe an E1 deficiency nonproliferation type 5 adenovirus vector or E1 and E3 deficiency nonproliferation type 5 adenovirus vectors, a type 5 adenovirus vector having a gene encoding an HIV envelope protein or a gag gene. Furthermore, the documents 1-4 are recognized to describe histotropic property of virus vector can be controlled by substituting a gene encoding the fiber protein of a nonproliferation type 5 adenovirus vector to a gene encoding the fiber protein of a type 11 or type 35 adenovirus in such a manner as allowing the expression.

Consequently, a person skilled in the art could have easily conceived the idea of substituting a gene encoding the fiber protein of the type 5 adenovirus to a gene encoding the fiber protein of a type 11 or type 35 adenovirus in such a manner as allowing the expression in order to .control histotropic property of type 5 adenovirus vector in view of type 5 adenovirus vector as described in the documents 5-8. At this time, a person skilled in the art could have appropriately manufactured pharmaceutical composition containing chimeric adenovirus vector.

Accordingly, it is not recognized to have special effects by means of the subject matters of claims 1-11.